

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1 – 24 (Cancelled)

25. (Original) A novel amylase which acts on a substrate saccharide, the substrate saccharide being composed of at least three sugar units wherein at least three sugar units from the reducing end are glucose residues, so as to liberate principally monosaccharides and/or disaccharides by hydrolyzing the substrate saccharide from the reducing end side.

26. (Original) The novel amylase claimed in Claim 25 which has a principal activity of acting on a substrate saccharide, the substrate saccharide being composed of at least three sugar units wherein at least three sugar units from the reducing end side are glucose residues and the linkage between the first and the second glucose residues from the reducing end side is  $\alpha$ -1,  $\alpha$ -1 while the linkage between the second and the third glucose residues from the reducing end side is  $\alpha$ -1,4, so as to liberate  $\alpha$ , $\alpha$ -trehalose by hydrolyzing the  $\alpha$ -1,4 linkage between the second and the third glucose residues.

27. (Currently Amended) The novel amylase claimed in Claim 25 ~~or 26~~, wherein said amylase also has an activity *of* endotypehydrolyzing one or more  $\alpha$ -1,4 linkages within the molecular chain of a substrate.

28. (Currently Amended) The novel amylase claimed in Claim 25, ~~26 or 27~~, wherein said amylase has an activity of hydrolyzing a substrate trehaloseoligosaccharide such as glucosyltrehalose and maltooligosyltrehalose at the  $\alpha$ -1,4 linkage between the second and the third glucose residues from the reducing end side to liberate  $\alpha$ , $\alpha$ -trehalose.

29. (Currently Amended) The novel amylase claimed in ~~any one of Claims 25 to 28~~ Claim 25, wherein its molecular weight measured by SDS-polyacrylamide gel electrophoresis is 61,000 to 64,000, approximately.

30. (Currently Amended) The novel amylase claimed in ~~any one of Claims 25 to 29~~ Claim 25, wherein the amylase has the following physical and chemical properties:

- (1) Optimum pH with in the range from 4.5 to 5.5;
- (2) Optimum temperature within the range from 60 to 85°C;
- (3) pH stability within the range from 4.0 to 10.0; and
- (4) Thermostability which allow 100% enzymatic activity to remain even after exposure at 80°C for 6 hours.

31. (Currently Amended) The novel amylase claimed in ~~any one of Claims 25 to 30~~ Claim 25, wherein the isoelectric point measured by isoelectric focusing is pH 4.3 to pH 5.4.

32. (Currently Amended) The novel amylase claimed in ~~any one of Claims 25 to 31~~ Claim 25, wherein its activity can be fully inhibited with 5 mM CuSO<sub>4</sub>.

33. (Currently Amended) The novel amylase claimed in ~~any one of Claims 25 to 32~~ Claim 25, wherein the amylase is derived from an archaebacterium belonging to the order *Sulfolobales*.

34. (Original) The novel amylase claimed in Claim 33, wherein the amylase is derived from an archaebacterium belonging to the genus *Sulfolobus*.

35. (Original) The novel amylase claimed in Claim 34, wherein the archaebacterium belonging to the genus *Sulfolobus* is the *Sulfolobus solfataricus* strain ICM1 (FERM BP-4626) or a variant thereof.

36. (Original) The novel amylase claimed in Claim 34, wherein the archaebacterium belonging to the genus *Sulfolobus* is the *Sulfolobus solfataricus* strain DSt4 5833 or a variant thereof.

37. (Original) The novel amylase claimed in Claim 34, wherein the archaeobacterium belonging to the genus *Suifolobus* is the *Suitoiobus acidocaidarius* strain ATCC 33909 or a variant thereof.

38 – 122 (Cancelled)

123. (Currently Amended) A polypeptide comprising an amino acid sequence shown in ~~Sequence No. 6~~ SEQ ID NO: 6 or an equivalent sequence thereof.

124. (Currently Amended) A polypeptide comprising an amino acid sequence shown in ~~Sequence No. 8~~ SEQ ID NO: 8 or an equivalent sequence thereof.

125. (Original) The polypeptide claimed in Claim 123 further comprising Met at the N terminus.

126. (Currently Amended) The polypeptide claimed in ~~any one of Claims 123 to 125~~ Claim 123 which has an activity of acting on a substrate saccharide, the substrate saccharide being composed of at least three sugar units wherein at least three sugar units from the reducing end side are glucose residues and the linkage between the first and second glucose residues from the reducing end side is  $\alpha$ -1,  $\alpha$ -1 while the linkage between the second and third glucose residues from the reducing end side is  $\alpha$ -1,4, so as to liberate  $\alpha,\alpha$ -trehalose by hydrolyzing the  $\alpha$ -1,4 linkage between the second and third glucose residues.

127. (Currently Amended) The polypeptide claimed in ~~any one of Claims 123 to 125~~ Claim 123 which has the following principal activities:

(1) An activity of endotype-hydrolyzing one or more of  $\alpha$ -1,4 glucoside linkages in a sugar chain;

(2) an activity of acting on a substrate saccharide, the substrate saccharide being composed of at least three sugar units wherein at least three sugar units from the reducing end are  $\alpha$ -1,4-linked glucose residues, so as to liberate principally monosaccharide *and/or* disaccharide by hydrolyzing the substrate from the reducing end side; and

(3) an activity of acting on a substrate saccharide, the substrate saccharide being composed of at least three sugar units wherein at least three sugar units from the reducing end side are glucose residues and the linkage between the first and second glucose residues from the reducing end side is  $\alpha$ -1,  $\alpha$ -l while the linkage between the second and third glucose residues from the reducing end side is  $\alpha$ -14, so as to liberate  $\alpha$ , $\alpha$ -rehalose by hydrolyzing the  $\alpha$ -1,4 linkage between the second and third glucose residues.

128. (Currently Amended) The polypeptide claimed in ~~any one of Claims 123 to 127~~ Claim 123 wherein the optimum temperature for its action is 60 to 85°C.